

REMARKS

Claims 1-15 are all the claims pending in the application. Claims 1-3 are rejected under 35 U.S.C. § 102(b) as being anticipated by Nagaoka et al. (JP 09-006283; hereinafter “Nagaoka”). Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagaoka. Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagaoka et al. as applied to claim 1, above, and further in view of Anderson et al. (US 6,369,706; hereinafter “Anderson”). Claims 7-9, 11, and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant’s Admitted Prior Art (hereinafter “AAPA”) in view of Nagaoka. Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Nagaoka and further in view of Anderson. Claims 4, 10, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant submits the following in traversal.

Rejection of Claims 1-3 under § 102(b) by Nagaoka

Applicant respectfully submits that claim 1 is patentable because Nagaoka fails to disclose the heating portion as claimed. In the Examiner’s response, the Examiner still does not point out where Nagaoka discloses the claimed heating portion being disposed at a rear of the substrate. Rather, the Examiner bases his argument on where the heating apparatus 9 would “naturally” be located. Although there is no legal basis for rejecting claims under § 102 based on “natural” teachings of the cited art, it appears that Nagaoka is being cited as inherently disclosing the heating apparatus 9 being on a rear surface of a rear substrate of the PDP of Nagaoka.

“In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” MPEP § 2112(IV) (emphasis in original). Here, the requisite basis in fact or technical reasoning to reasonably support the determination that the heating apparatus 9 would be on a rear surface of a rear substrate, has not been provided. In the Final Office Action, the Examiner’s technical reasoning for having the heating apparatus 9 on the rear surface of the rear substrate are: i) so that that the heating apparatus 9 would not interfere with the display and ii) to heat the “entire area of the individual cells.” Line 1, page 6 – line 2, page 7; and lines 9-13, page 7. Such technical reasoning, however, does not necessarily support having the heating apparatus 9 on the rear substrate. For example, a heating apparatus disposed vertically below the rear substrate when the display panel is vertically mounted on a wall, would not block the displayed image and also heat all the individual cells (heated air would rise to heat all the cells, including cells in the center). Since the Examiner’s reasoning supports the possibility of having an arrangement of a heating apparatus that is different from that espoused by the Examiner, Nagaoka does not inherently disclose the claimed heating portion as claimed.

In support of the Applicant’s position, Applicant submits herewith a translation of paragraphs 0142, 0232 0233 of Nagaoka which cite the panel heating apparatus 90, as ATTACHMENT I. Clearly, the translated paragraphs do not disclose the panel heating apparatus 9 as being disposed behind the a rear substrate.

For at least the above reasons, claim 1 is patentable.

Claims 2-3, which depend from claim 1, are patentable for at least the reasons submitted for claim 1.

Rejection of Claim 6 under § 103(a) over Nagaoka

Applicant submits that claim 6, which ultimately depends from claim 1, is patentable for at least the reasons submitted for claim 1.

Rejection of Claim 5 under § 103(a) over Nagaoka and further in view of Anderson

Applicant submits that claim 5 is patentable because a prima facie case of obviousness has not been established. Applicant submits that the placement of the heating apparatus 9 of Nagaoka on the rear substrate is contrary to the teachings of Anderson which teaches having a heating coil around the periphery of the LCD screen 606. See Fig. 6. Therefore, one skilled in the art would not place the heating coil of Anderson on a rear substrate of Nagaoka and any such modification would merely rely on impermissible hindsight.

Rejection of Claims 7-9, 11 and 13 under § 103(a) over AAPA in view of Nagaoka

For reasons similar to those submitted for claim 1, claim 7 is patentable because Nagaoka fails to teach, suggest or provide motivation for the heating apparatus 9 being disposed at a rear of the rear substrate.

Claims 8, 9, 11 and 13, which depend from claim 7, are patentable for at least the reasons submitted for claim 7.

Rejection of Claim 12 under § 103(a) over AAPA in view of Nagaoka and further in view of Anderson

Applicant submits that claim 12, which ultimately depends from claim 7, is patentable for at least the reasons submitted for claim 7.

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. APPLN. NO.: 10/820,154

ATTY DOCKET NO.: Q79288

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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CUSTOMER NUMBER


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ATTACHMENT I

[Title]

Temperature Compensation Method and Apparatus of Plasma Display Panel,
Heating Prevention Method and Apparatus of Plasma Display Panel, and Plasma
Display Panel Display Apparatus Using the Same

[0142] As illustrated in FIG. 1, a plasma display apparatus according to an embodiment of the present invention includes a PDP 1 having a structure as described above; an address driver 3 which applies an address pulse P_{AA} and a write pulse P_{AW} with respect to address electrodes A_1 through A_m according to a control signal S_A from a control circuit 2 to be described later; an X common driver 4 which applies a write pulse P_{XW} and a sustain pulse P_{XS} to be described later to X electrodes X_1 through X_N , according to a control signal S_X from the control circuit 2 to be described later; a temperature detector 5 such as a thermo couple which is a second detection device for detecting a temperature of the X common driver 4 and outputting a detection signal S_{TX} ; a Y scan driver 6 which is a driving device for applying a scan pulse P_{AY} to Y electrodes Y_1 through Y_N , according to a control signal S_{YS} of the control circuit 2 to be described later; a Y common driver 7 which is a driving device for applying a sustain pulse P_{YS} to the Y electrodes Y_1 through Y_N through the Y scan driver 6, according to a control signal S_{YC} from the control circuit 2 to be described later; a temperature detector 8 such as a thermo couple which is a second detection device for detecting a temperature of the Y common driver 7 and outputting a detection signal S_{TN} ; a panel heating device 9 which is a heating unit, such as a heater, etc., for heating the PDP 1, under the control of the micom 90 to be described later; a temperature detector 10 which is a first detector for detecting the temperature of the PDP 1 and outputting the detection signal S_{TP} ; a control circuit 2 which is a control unit for controlling driving of the PDP 1, according to the control of a predetermined signal (dot clock CLK), display data DATA, a vertical sync signal VSYNC, a horizontal sync signal HSYNC, and the micom 90 to be described later; a voltage converter 40 which converts a high-voltage power received from a driving high voltage input unit IN_V with respect to each pulse to be applied to the PDP 1, under the control of the micom 90 to be described later; an Erasable and

Programmable-Read Only Memory (EP-ROM) 50, which in advance stores a waveform of each pulse to be applied to the PDP 1, and includes a driving waveform area 50A for outputting a waveform of a desired pulse, under the control of the micom 90 to be described later, and a sustain pulse number setting area 50B; an environment temperature detector 60 which detects a temperature in the apparatus; a control circuit 71 which controls display of LED 70, as a warning device, under the control of the micom 90 to be described later; a control circuit 81 which controls the operation of an air cooling apparatus 80, under the control of the micom 90 to be described later; a relay controller 91 which prevents a high voltage from being applied to the voltage converter 40 and the control circuit 2, under the control of the micom 90 to be described later; a consumption power detector 92 which detects the entire consumption power of a plasma display apparatus S₁; and a micom 90 which functions as a brightness control device, a voltage control device, and a signal control device.

In the above construction, a high voltage power for driving each driver, as well as control signals S_A, S_{VS}, S_{VC}, and S_X, is applied to the each driver. Also, display data DATA is received from the outside through the display data input unit IN.

[0232] If the temperature of the PDP 1 does not reaches a predetermined threshold value according to the detection signal S_{TP} input to the micom 90, the result is output to the panel heating device 9. Accordingly, the panel heating device 9 operates to compulsorily heat the PDP 1.

[0233] Also, when the temperature of the PDD 1 exceeds the threshold value, a signal for stopping the operation of the panel heating device 90 is output from the micom 90. As described above, according to the eighth embodiment, it is possible to shorten a lighting period of a discharge cell to be lighted during a sustain discharge period.

(X) Ninth embodiment

successively, a ninth embodiment corresponding to the invention as recited in claims 11, 14, 28, 31, and 34 will be described with reference to FIG. 1.